REMARKS

Reconsideration of the above-identified application, as amended, is respectfully requested.

In the Official Action dated June 28, 2004, the Examiner rejected Claims 1-14 under 35 U.S.C. §103(a) as being allegedly unpatentable over U.S. Patent No. 6,496,510 to Tsukakoshi et al. (Tsukakoshi) in view of U.S. Patent No. 6,643,706 to Marques et al. (Tsukakoshi).

Applicants respectfully disagree. As a preliminary matter, applicants amend each of independent Claims 1 and 9 to clarify that each of the one or more network control devices (i.e., control processors CP1 -> CPn of Figure 1) handle one or more routing protocol applications, and further that each NP device maintains a single routing table having packet forwarding entries. As claimed in each of Claims 1 and 9, each forwarding table entry includes a data structure indicating identification of the routing protocol application in addition to a version of a particular routing protocol application instance. Claims 1 and 9 have been further amended to set forth the respective method and system for updating forwarding table entries upon failure of a routing protocol application in a network control device. More particularly, Claims 1 and 9 have been further amended to highlight the inventive use of routing protocol application version numbers for indicating forwarding table entries having updated routing protocol application version values vs. "aged" routing protocol application version values maintained in the data structures of the existing forwarding table maintained by the Network Processor (NP) device. Particularly, as now set forth in amended Claims 1 and 9, in response to re-starting a failed routing protocol application, a provided control means will increment the version value of the

particular routing protocol application and communicate or otherwise cause the update of the data structure of the corresponding forwarding table entry(ies) with the incremented protocol application version value(s). This is particularly reflected in the amended Claim 1 adding the new step b) directed to upon re-starting a failed routing protocol application in a network control device, incrementing a version value of that re-started routing protocol application instance; and, new step c) directed to updating said data structures of the existing forwarding table entries with said incremented protocol application version values. Furthermore, in amended Claim 1, amended step d) is directed to the step of (and mechanism for) identifying for deletion existing forwarding table entries having data structures matching a designated selection criteria including an indication of a prior protocol application version value. Essentially, this particular feature added to amended Claims 1 and 9 had been subject of originally filed Claims 2 and 10, now cancelled. Thus, in a subsequently performed "table_incarnation_sync" process (See present specification on page 10, lines 25 et seq.) those "aged" forwarding table entries having prior protocol application version values (i.e., protocol application version values less than a current version value) will be deleted. In this manner, the existing forwarding table maintained by the NP device will not have to be restarted in synchrony with re-booting or re-starting a failed routing protocol application in the CP processor. Thus, the invention affords a seamless transition by maintaining the existing forwarding table without disrupting the packet forwarding process performed by the NP device. Alternately stated, as now set forth in new Claims 15 and 16 dependent upon respective Claims 1 and 9, the updating of the forwarding table entries is accomplished without disrupting network connectivity by having to reconstruct a new forwarding table in response to a failed routing protocol application.

Respectfully, Tsukakoshi, whether taken alone or in combination with Marques, does not teach or suggest the subject matter of amended Claims 1 and 9. While the Examiner appears to combine both a generic NP/routing table updating concept of Tsukakoshi with use of linked list/ radix tree addressable structure to provide an asynchronous-type of routing table update process as taught in Marques, this does not provide a "teaching" of the present invention as now claimed in amended Claims 1 and 9. Specifically, the combination of Tsukakoshi and Marques do not teach updating of the forwarding table entries without disrupting network connectivity by having to reconstruct a new forwarding table in response to a failed routing protocol application that has been re-started in a control processor device.

That is, in a first instance, neither Tsukakoshi nor Marques teach maintaining an additional forwarding table data structure indicating identification of a routing protocol application including a version of a particular routing protocol application instance. Moreover, neither Tsukakoshi nor Marques suggests incrementing a version value of a re-started routing protocol application instance in response to re-starting a failed application instance in the CP, and, neither teaches updating the data structures of the existing forwarding table entries with incremented protocol application version values as now claimed in the present invention incorporated in amended independent Claims 1 and 9. Furthermore, neither Tsukakoshi nor Marques teach or suggest the aging out of the old entries from the existing forwarding table, i.e., those entries that match a designated selection criteria including an indication of a prior protocol application version value.

It is respectfully submitted that the Examiner's reliance on Marques as providing "versioning" by use of its index (see Marques, Figure 9) is misplaced. Use of the index in Marques is related to facilitating searching in a radix tree structure and tracking currency of node

entries – which is different than use in the present invention of providing a criteria for deleting aged forwarding table entries in an existing forwarding table maintained in a NP device in response to re-starting or re-booting a new CP application or protocol application instance that has failed.

In sum, the present invention as set forth in amended Claims 1 and 9 provides a simple mechanism that enables the seamless transition when updating entries of packet forwarding tables by CP applications when a CP device or routing protocol application executing therein has failed. Moreover, implementation of the present invention obviates the need to regenerate a new NP device forwarding table in synchrony with the re-starting of a CP application, by enabling update of forwarding table entries in an existing forwarding table maintained by the NP device and subsequent aging out of protocol application packet forwarding entries as is performed in the present invention. That is, the present invention efficient forwarding table updates without disrupting packet forwarding process and without disrupting network connectivity.

Applicants respectfully submit that the present invention' s use of a data structure comprising a "signature" (incarnation and protocol application type) and use of "versioning" in updating routing table entries when a CP application fails, is neither taught nor suggested by the applied combination of references. As such, the applicants request the Examiner to withdraw the rejection of Claims 1, 3-9, and 11-14 under 35 U.S.C. §103(a), and to allow new claims 15 and 16.

This application is now believed to be in condition for allowance, and a Notice of Allowance is respectfully requested. If the Examiner believes a telephone conference might

expedite prosecution of this case, it is respectfully requested that he call applicant's attorney at (516) 742-4343.

Respectfully submitted,

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